



TITLE:

<Note> Note on a subcutaneous tumor found among wild chimpanzees

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Wild chimpanzees are known to suffer from skin diseases. Goodall¹ described ulcers, sores, abscesses, rashes and fungus disease developed in Gombe chimpanzees. Nishida et al.² reported a dermatophytosis in the previous issue of PAN. For more than 20 years, we have noticed that chimpanzees of the Mahale Mountains National Park, Tanzania, occasionally develop a kind of subcutaneous tumor in their lower abdomen. Since Goodall's book (pp.95-96) did not appear to describe this skin disease, we report here the general characteristics of the tumor.

These tumors have a hemisphere-like structure and are approximately the size of a ping-pong ball (Fig. 1). Both males and females and both aged and young individuals become afflicted with this condition, although most victims have been infants. Individuals exhibited no extraordinary behavior, such as taking action to avoid hitting the swollen part on tree trunks, while they were

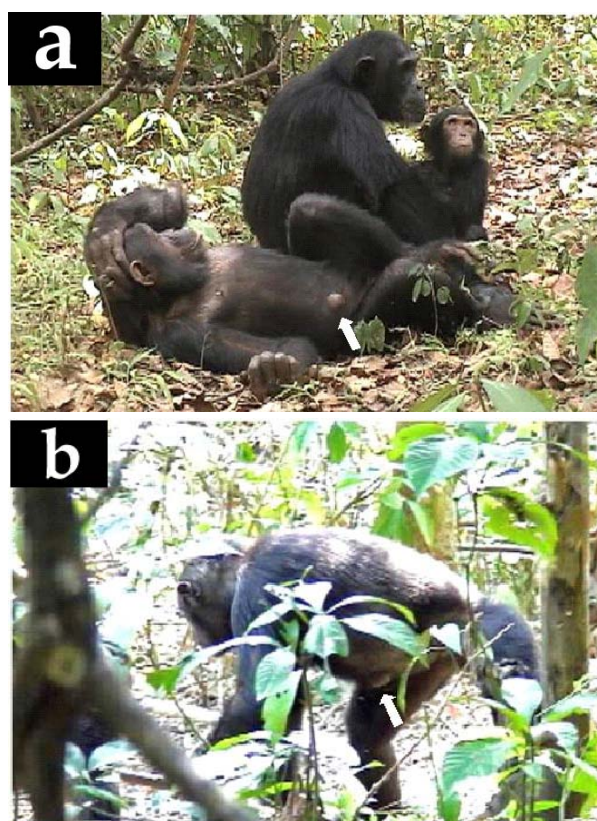


Fig. 1 Subcutaneous tumors. **a:** Orion's case. **b:** Fuji's case.

<NOTE>

**Note on a subcutaneous tumor
found among wild chimpanzees**

suffering from the tumor. Moreover, youngsters having a tumor did not refrain from wrestling with their playmates. Furthermore, other chimpanzees appeared to pay no special attention to the victim or the affected body part.

TN observed M-group chimpanzees during six periods: Aug. 9 to Oct. 13, 1999; Sept. 23 to Oct. 31, 2000; Sept. 5 to Oct. 3, 2001; Sept. 26 to Nov. 12, 2002; Aug. 16 to Sept. 22, 2003; Aug. 13 to Sept. 15, 2004 and Sept. 22 to Oct. 18, 2005. SF, TK and AI observed them from Dec. 23, 2004 to Feb. 21, 2005, from June 20 to Oct. 20 2007, and from Aug. 10 to Dec. 22, 2007, respectively. The dry season spans from mid-May to mid-October in Mahale, so our study periods were heavily biased to the dry season.

Table 1 summarizes all observations of the tumor during these periods. The tumor occurred in both the dry and rainy season. Orion has continuously exhibited the tumor for 7 years. Gwekulo has suffered from the tumor for more than 10 years, since she was earlier observed to have the tumor outside of the above observation periods (see below). However, symptoms disappeared among some individuals. Sometimes, we find close relatives, who travel together most of the time, sharing the same disease. For example, Orion and Oscar are maternal brothers as well as maternal uncles of Rubicon and, moreover, Ako is Acadia's mother.

This type of tumor might be benign because we have not confirmed the subsequent deaths of victims. However, it could sometimes be a serious condition for them: Once (outside of the periods above) TN observed that an old female, Gwekulo, had developed a huge tumor that emitted pus from the affected area (Fig. 2). It was not

Table 1 Subcutaneous tumor recorded in M-group chimpanzees (1999-2007)

Year	Dates	Victim	Sex	Age in years	Notes	Observer
1999	Aug.11	Caesar	M	0	belly	TN
	Sept.30-Oct.8	Acadia	F	1	upper belly	TN
	Sept.30	Ako	F	18	3 parts in belly	TN
2000	Oct.4	Rubicon	F	2	left side of belly	TN
	Oct.4	Orion	M	9	belly	TN
2001	Sept.9	Oscar	M	3	left side of belly	TN
	Sept.26	Orion	M	10	right side of belly	TN
2002	Nov.9	Orion	M	11	belly; 6 cm in diameter	TN
2005	Feb.7	Wakusi	F	*44	lower belly	SF
	Oct.18	Fuji	F	*14	belly	TN
	Oct.18	Orion	M	14	right belly	TN
2007	Aug.23	Acadia	F	9	lower right belly; 2 cm in diameter	TK
	Aug.30	Orion	M	16	right belly	TK
	Sept.21-Oct.6	Emory	M	6	upper belly	TK & AI
	Oct.9	Gwekulo	F	*46	right belly	TK

*presumed.

unlike the kind of tropical ulcer that human residents of the tropics suffer from. Gwekulo's case might be due to a secondary infection. Among humans, benign tumors³ such as an epidermoid cyst and lipoma resemble the one reported here. In addition, it is known that similar nodule is formed in the body when humans are infected with parasites such as *Onchocerca volvulus*, *Sparganum mansoni*, *Tenia solium* and *Cysticerci cellulosae*⁴. However, it is impossible for us to identify the disease without the cytodiagnosis.

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Fig. 2 It is likely that Gwekulo had a secondarily infected boil on the subcutaneous tumor.